



## COURSE OVERVIEW

The appropriate management of waste and materials arising on-site from decommissioning is an essential factor to the success of a programme. The course will clarify the international framework, the different management approaches and techniques to optimize the waste streams (practical examples from European countries).

## WHO IS THE COURSE FOR?

International stakeholders working in nuclear sciences and industry and wishing to acquire field knowledge in the nuclear waste management strategies and regulatory.

## COURSE LEARNING OUTCOMES

- Comprehend and apply the European requirements linked to the waste management, the clearance of waste, materials and effluents in decommissioning;
- Comprehend the practices for the waste and materials from decommissioning (sorting, packing, measurement, conditioning, transport, storage, ..) and the way of optimising their management ;
- Differentiate the different types of waste as well as their evacuation routes ;
- Elaborate a waste management plan for a decommissioning project;
- Build and steer a waste release / recovery process.

## ENTRY REQUIREMENTS

- Technical or scientific higher education (minimum 3 years)
- Experience in the nuclear field (minimum 1 year)

Duration:	4,5 days (30 hours)
Location	INSTN/CEA-Marcoule, France
Group	Limited to 18 participants
Dates	September 20-24, 2021
Programme manager	Vincent LERAT ( <a href="mailto:vincent.lerat@cea.fr">vincent.lerat@cea.fr</a> )
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## TOPICS

- Regulatory principles and strategies for nuclear material and waste management
- Waste characterisation and zoning
- Release of waste and materials
- Waste logistics and transport
- Types of waste and their management
- Management of material and waste streams, including reuse or release
- Practical case study – elaboration of a waste management plan
- Information and communication
- Technical visits on the Marcoule site

## WHO IS TEACHING THIS COURSE ?

Lectures are provided by international experts and professionals from CEA, EDF, CYCLIFE, ORANO, ANDRA, TECNATOM, Ecole Normale Supérieure de Lyon and the European Commission in the field of material and nuclear waste management in decommissioning.

## OUTLINE PROGRAMME OF THE COURSE

*Welcome - Introduction*

*Sept. 20 - Monday*

### *Preamble - Regulatory principles and strategies for nuclear material and waste management*

- Decommissioning waste management strategies in Europe, comparative analysis
- Disposal (facilities) of decommissioning waste in France and abroad - Prospects

### *Sub-session I : Characterization and zoning*

- Basics on the characterization and measurement of nuclear waste
- Waste zoning of facilities (the French example)

### *Sub-session II : Recovery and release of waste*

*Sept. 21 - Tuesday*

- Introduction on clearance of waste and materials (based on the Spanish example)

### *Sub-session III : Waste logistics and transport*

- Logistics related to the management of dismantling waste on a nuclear site
- Transport regulations in the nuclear sector

### *Sub-session IV : Presentation of waste streams and their management (France)*

- Conventional waste management
- Very-low-level waste management
- Low-level waste management
- Management of hazardous chemical waste
- Liquid and gaseous effluents management
- Technical and financial management in the nuclear waste sector

*Sept. 22 - Wednesday*

### *Sub-session V : Management of material and waste streams including recovery and release*

- Presentation of a typical case of waste release on a decommissioning site in Spain
- A waste recovery strategy : fusion and recycling prospects (experience in Sweden)
- Principles of recovery or release of waste from the dismantling of nuclear installations

*Sept 23 - Thursday*

### *Sub-session VI : Learning outcomes assessment – practical case study*

- *Case study* : Development of a Nuclear Waste Management plan for a particular facility in dismantling

### *Sub-session VII : Communication / Information*

- Information and interaction with the public

### *Sub-session VIII : Facility Visits*

*Sept 24 - Friday*

- Visit of a radioactive waste treatment and conditioning facility : the Marcoule CDS
- Visit of a facility in decommissioning, focussed on the waste management aspects

### *Sous-session IX : Final assessment of learning outcomes*

- *Final test*

*Session closure*